Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 9 with the following amended paragraph:

In a CDMA mobile communication system, there are severe Multiple Access Interference (MAI) and Inter-Symbol Interference (ISI). The traditional received signal detection for single user employs a matched filtering method, wherein the matching filter performs correlated matching operation on the user's spread spectrum sequence waveform after channel response, to implement separation and detection of desired signal and interfering signal. In case of severe MAI and Multi-Path Interference (MPI), the performance of the traditional single-user matched filtering method can not meet the requirement. In a time-slot CDMA system, a joint detection technique can be used, i.e., information on the sent signals and the channel responses thereof for all users are utilized and the signal detection is treated as a unified ~~and correlated~~ joint detection process. When the received signal is detected with the joint detection method, Multiple Access Interference and Inter-Symbol Interference can be suppressed, and the performance of the Code Division Multiple Access system can be improved significantly (see A. Klein, G. K. Kaleh and P. W. Baier, "Zero forcing and minimum mean square error equalization for multiuser detection in code division multiple access channels," IEEE Trans. Veh. Technol., vol. 45, pp.276-287, May 1996).

Please replace the paragraph beginning at page 3, line 8 with the following amended paragraph:

Regarding the orthogonality of spread spectrum codes: in an orthogonal code Code Division Multiple Access system, spread spectrum codes are the product of mutually orthogonal channelization codes and the scrambling codes for the cell; there is orthogonality between the different ~~code channels~~ spread spectrum codes in the same cell. For example, in 3GPP TDD standard, complex spread spectrum codes $\underline{\mathbf{c}}^{(k_{ru})}$ are binaries modulated with j^{i} (j^{i} represents rotation factor according to the serial number of code chip), and the spread spectrum codes $\underline{\mathbf{c}}^{(k_{ru})}$ of downlink can be obtained with the following formula:

$$\underline{\mathbf{c}}^{(k_{ru})} = w_{16}^{(k)} \cdot \mathbf{c}_{16}^{(k)} \cdot \underline{\mathbf{v}}$$

where, $\mathbf{c}_{16}^{(k)}$ is the channalization code of k_{ru} (Walsh Code with spread spectrum factor = 16 and serial number $= k$), $w_{16}^{(k)}$ is the corresponding complex factor, $\underline{\mathbf{v}}$ is the complex scrambling code vector dependent on the cell.

Please replace the paragraph beginning at page 10, line 2 with the following amended paragraph:

Step 13: performing matched filtering on the multi-path signals and performing maximum ratio combining with considering the power of interference to the multi-path signals, to obtain the optimized matched filtering output. That is to say, perform correlated matched filtering on each of the multi-path signals ~~in the signal code channel~~ by utilizing the channel response estimation results of the spread spectrum code of the user to be detected at each time delay position, and perform weighted summation according to the maximum ratio combining on the matched filtering result of the multi-path signals by utilizing the total power of interference to the signal code channel at each time delay position obtained in step 12, so as to obtain the optimized matched filtering output.